Section 3
The Las Vegas Valley Construction Site Runoff Management Program

THIS PAGE LEFT BLANK INTENTIONALLY

Section 3.0 | The Las Vegas Valley Construction Site Runoff Management Program

3.1 Local Conditions

The Las Vegas Valley watershed lies in the Mojave Desert of the Southwestern United States. Surface soil conditions and poor vegetation cover contribute to conditions of high natural erosion rates and sediment loads compared to other parts of the country. However, surface disturbance due to construction activities is believed to increase erosion and sediment transport over natural conditions, and has been identified by NDEP as a pollutant to be addressed by the MS4 Permittees.

Sediment transport to, and deposition in, Las Vegas Wash and Lake Mead is a concern for agencies that manage these bodies of water. Pollutants that accompany the sediment load are of concern to Southern Nevada Water Authority (SNWA), which delivers drinking water from Lake Mead from a pump station intake near the Las Vegas Wash confluence.

Local climatic conditions affect selection and design of construction site BMPs. Las Vegas Valley is the driest large MS4 community in the nation, with a mean annual rainfall of about 4.2 inches. Rainfall is infrequent, with an average of 15 days with measurable rainfall per year, and 11 days with a minimum of 0.10 inches of rainfall needed to produce significant runoff. Up to 0.20 inches of rainfall may be necessary to produce substantial runoff in undeveloped desert areas upstream of urban development. Isolated thunderstorms produce the heaviest rainfall, and typically cover only a few square miles for less than 6 hours.

Las Vegas Valley continues to be one of the fastest growing urban areas in the nation, so construction site management programs will apply to a considerable area of future development. The majority of new development consists of housing and associated commercial development expanding from the existing urban center, and large hotel/casinos. The majority of significant redevelopment consists of new hotel/casinos and high-rise residential development in the vicinity of the Las Vegas Strip.

3.2 Local Program Requirements

The MS4 Permittees are responsible for developing, implementing, and enforcing a program to prevent pollutants from construction activities from entering their municipal storm drain systems. Per federal regulations (40 CFR § 122.26), the program must include the following elements:

- An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under state or local law;
- Requirements for construction site operators to implement appropriate erosion and sediment control BMPs;
- Requirements for construction site operators to control wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at construction sites that may cause adverse impacts to water quality;

- Procedures for site plan review which incorporate consideration of potential water quality impacts;
- Procedures for receipt and consideration of information submitted by the public; and
- Procedures for site inspection and enforcement of control measures.

3.3 Legal Authority

The Cities of Las Vegas, North Las Vegas and Henderson and Clark County have adopted municipal codes and ordinances that grant them the authority to require BMPs to control erosion and sediment transport, prohibit materials and wastes from being deposited on streets and public places, prohibit non-stormwater discharges to the storm drain system, conduct inspections of industrial and commercial dischargers, and assess fees and fines.

The MS4 Permittees have also adopted ordinances and practices that require permits for construction activities and a regulatory process for reviewing improvement plans, approving permits and inspecting construction sites for compliance. The permits for construction activities include grading, site development, building, and encroachment permits. Plans requiring review include tentative, final, parcel and subdivision maps, site plans, and drainage plans. The existing permitting and plan review process differs between the jurisdictions and is based on different governmental structures, ordinances, policies and procedures. Grading, which is the primary land disturbing construction activity, is currently regulated by the four jurisdictions under the ordinances presented in **Table 3-1**.

Table 3-1

Existing Grading Regulations

	City of Las Vegas	City of North Las Vegas	City of Henderson	Clark County
Code Sections	Municipal Code 16.24.080 (Plot and Grading Plans)	Municipal Code 17.28.040 (Procedure for Site Plan Approval)	Municipal Code 13	Municipal Code 30.32.040 (Grading Permit)
Requirements	Drainage and Grading Permits	Drainage and Grading Permits	Floodplain Management	Drainage and Grading Permits

Although the regulation of grading and other types of earthwork construction varies between the four jurisdictions, their ordinances are consistent in requiring construction site operators to implement BMPs to control on-site erosion and sediment transport, and minimize discharges of sediment and other pollutants to the MS4. The ordinances require construction sites to properly manage construction materials and wastes so that they cannot be transported by stormwater runoff to the MS4. Implementation of BMPs is required at all construction sites that disturb a total area of 1 acre or greater. The BMPs must be implemented according to the performance standards noted in the following section of this *BMP Guidance Manual*.

The application of uniform performance standards, together with the BMP specifications presented in **Section 5.0** and **Appendix C** of this *BMP Guidance Manual*, provides the regulatory and technical parameters that must be met to implement construction site discharge control to the maximum extent practicable (MEP). The policies and procedures of the MS4 Permittees (presented in **Section 3.5**) are intended to provide the regulatory mechanism necessary to ensure these standards are implemented.

3.4 Performance Standards

The goal of the construction site runoff management program is to conduct all construction activities in a manner that effectively mitigates accelerated soil erosion, sediment transport and sediment deposition off-site and also manages construction materials and wastes to prevent or minimize their potential discharge from the site to the MEP. The BMPs selected by the construction site owner/operator shall meet all of the following standards.

1. Schedule construction activities to minimize the total amount of soil disturbed at any given time. Preserve native vegetation and surficial soils to the maximum extent practicable and conduct clearing and grading only in areas necessary for building activities and equipment traffic.

2. Establish temporary erosion and sediment transport control practices prior to construction activities.

3. Protect slopes susceptible to erosion by installing controls such as terraces, benches, retaining walls, temporary slope drains, fiber rolls, rolled erosion control products and vegetation.

4. Design and construct all temporary and permanent facilities that convey water around or through disturbed areas with slopes and control measures that limit the flow of water to non-erosive velocities.

5. Protect waterways within and bordering the site by installing buffers and temporary stream crossings. Protect natural drainages, storm drain channels and storm drain inlets in the vicinity of construction sites from disturbance, sedimentation and deposition of polluting materials such as construction site wastes.

6. Retain sediment caused by accelerated soil erosion from surface water before it leaves the site by installing BMPs such as temporary diversion dikes, silt fences, and v-ditches.

7. Remove sediment accumulated in BMPs at regular intervals and as soon as practicable after a stormwater runoff event. Sediment must be removed when BMP design capacity has been reduced by 50 percent.

8. Control construction site entrances and exits to minimize sediment deposition on roads to the maximum extent practicable.

9. Do not store soil, aggregates, compost, construction materials or wastes on paved roadways.

10. Establish permanent stabilization practices on areas that have been disturbed as soon as practicable and no later than 14 days after construction activity in that portion of the site has temporarily or permanently ceased. This includes compliance with all dust control activities including those involving surface stabilization with dust palliatives. Some exceptions may apply; refer to the Nevada Stormwater General Permit for Construction Activity NVR100000, Section III.A.5.

11. Properly store construction site materials and manage wastes to prevent or minimize contact with stormwater and transport off-site. Construction site materials include, but are not limited to, petroleum products, paints, adhesives, and solvents. Construction site wastes include, but are not limited to, concrete washout, excess construction materials, empty storage containers, and litter.

12. Properly manage vehicle and equipment fuelling, maintenance, storage and parking areas to prevent and control leaks and spills. Properly manage the cleaning of vehicles and equipment to minimize discharge of wash water and pollutants to the MEP to the storm drain system, natural drainages or watercourses.

13. Establish permanent stabilization on all bare soils with perennial vegetative cover, rock mulch, or equivalent permanent stabilization measures upon completion of all site soil disturbing activities. Areas stabilized with vegetative cover must have a minimum density equivalent to 70 percent of the native background vegetative cover. Some exceptions may apply, refer to the Nevada Stormwater General Permit for Construction Activity NVR100000, Section IV.C.1. and 2.

If the project or site exhibits conditions that make achieving any of the objectives noted above infeasible, the contractor or other responsible party shall note those conditions in the Performance Standards Compliance Checklist (**Appendix B**) and provide the rationale for eliminating a standard.

3.5 Local Policies and Procedures

The MS4 Permittees have developed a regional approach to implementing a Construction Site Runoff Management Program in conjunction with local stakeholders. In addition to this regionally adopted *BMP Guidance Manual*, three procedural checklists will be consistently used by site operators and/or owners to assist the entities with the task of ensuring that BMPs are implemented at construction sites in accordance with the standards and specifications of this *BMP Guidance Manual*. The checklists will be used to address construction permit submittal requirements and plan review practices; performance standards compliance; and inspection, both by contractors and local government inspectors. The checklists developed to address these are the following:

- Construction Permit Submittal Checklist
- Performance Standards Compliance Checklist
- Construction Site Inspection Checklist

Blank copies of these checklists are presented in **Appendix B**. Owners and/or operators may use their own Construction Site Inspection Checklist in place of the one developed for this *BMP Guidance Manual*, however, it must contain, at a minimum, all the information required by the checklist developed for this *BMP Guidance Manual*.

These checklists represent the fundamental framework for the regional construction site discharge program. Each jurisdiction will individually be responsible for their own ordinances, implementing plan review, permitting, and inspection of construction sites.

3.5.1 Plan Review

The following regional plan review policies and procedures were developed after consultation with NDEP and stakeholders regarding the required contents of a local program. Additional plan review procedures may be implemented individually by each jurisdiction.

The Construction Permit Submittal Checklist will be used by City and County staff to identify projects that will disturb 1 acre or larger. This includes all projects that may require a grading, site development, building, or encroachment permit (including public works projects). It may also be applied to plans requiring review, including final, parcel, and subdivision maps and site drainage plans. If the applicant indicates the total planned area of land disturbance will be 1 acre or more on the checklist, then they must submit a copy of their NOI submitted to NDEP and a copy of the letter of authorization from NDEP. If the applicant has not yet received the letter of authorization, a copy of the receipt for payment of the annual fee that is due at the time of filing is also acceptable.

Once the applicant files the NOI and pays the annual fee, they are immediately covered under the Nevada Stormwater General Permit for Construction Activity. By submitting copies of the NOI, the letter of authorization or the receipt, completing and signing the checklist, the applicant acknowledges that they are aware of Nevada Stormwater General Permit for Construction Activity requirements, including the requirement to develop and implement a site specific SWPPP. The applicant further acknowledges that they are aware of this *BMP Guidance Manual* and the required performance standards noted above. A copy of the Performance Standards Compliance Checklist (discussed below) must be attached to the Construction Permit Submittal Checklist. In addition, the permit submittal checklist indicates that applicants must include five Standard Notes on all site plans for projects that disturb one or more acres. These Standard Notes are as follows:

1. Standard Note No. 1: The Owner, Site Developer, Contractor, and/or their authorized agents shall each day remove all sediment, mud, construction debris, or other potential pollutants that may have been discharged to, or accumulated in, the public rights of way of the _____[*insert applicable jurisdiction*] as a result of construction activities associated with this site development or construction project. Such materials shall be prevented from entering the storm sewer system.

2. Standard Note No. 2: Additional construction site discharge best management practices may be required of the owner and his or her agents due to unforeseen erosion problems or if the submitted plan does not meet the performance standards specified in the_____[*insert jurisdiction's ordinance reference*] and the *Las Vegas Valley Construction Site BMP Guidance Manual.*

3. Standard Note No. 3: Temporary or permanent stabilization practices will be installed on disturbed areas as soon as practicable and no later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Some exceptions may apply; refer to the Nevada Stormwater General Permit for Construction Activity NVR100000, Section III.A.5.

4. Standard Note No. 4: At a minimum, the Contractor or his agent shall inspect all disturbed areas, areas used for storage of materials and equipment that are exposed to precipitation, vehicle entrance and exit locations, and all BMPs weekly, and within 24 hours after any rain event of 0.5 inches or more. The Contractor or his agent shall update or modify the Stormwater Pollution Prevention Plan as necessary. Some exceptions to weekly inspections may apply, such as suspension of land disturbance activities. Refer to the Nevada Stormwater General Permit for Construction Activity NVR100000, Section III.A.12.

5. Standard Note No. 5: Accumulated sediment in BMPs shall be removed within seven days after a stormwater runoff event or prior to the next anticipated storm event, whichever is earlier. Sediment must be removed when BMP design capacity has been reduced by 50 percent or more.

The MS4 Permittees may ask to see a copy of the SWPPP to ensure that one has been completed for the project site. However, the Cities and the County are not responsible for reviewing or approving SWPPPs.

The Performance Standards Compliance Checklist will be submitted with the Construction Permit Submittal Checklist. Permit applicants and those that require plan reviews for proposed construction projects that will disturb 1 or more acres of land will use the checklist to establish a set of BMPs to meet the performance standards noted in **Section 3.3**. During the first visit to the site, inspectors will also review the applicant's checklist to ensure that the set of BMPs selected fully meet all of the standards. The checklist indicates that the applicant must select at least one BMP to meet each performance standard (individual BMPs may satisfy more than one standard). It further indicates that the applicant is responsible for ensuring that the BMPs selected on the checklist are included in the contract bid documents. Finally, the checklist infers that some project sites may have characteristics that make meeting a performance standard infeasible or inapplicable (e.g., no steep slopes or no storm drain inlets at the site). If this occurs, the applicant is required to describe the specific site characteristics that prevent them from meeting a performance standard at the bottom of the form. In order to be effective, this checklist, together with the Construction Permit Submittal Checklist must be completed before permits are granted or plans are approved.

3.5.2 Inspection and Enforcement

Construction site operators are encouraged to use a Construction Site Inspection Checklist (either their own or the one included with this *BMP Guidance Manual*) for the weekly and post storm self-inspections required under the Nevada Stormwater General Permit for Construction Activity. The MS4 Permittees will use the checklist included with this *BMP Guidance Manual* to ensure a consistent approach at conducting inspections and to verify that performance standards are being met.

The Construction Site Inspection Checklist provided in **Appendix B** is intended for use by construction site operators who are required to conduct frequent inspections to ensure that site BMPs are installed and maintained appropriately. Construction site operators, or their qualified agents, should attach completed inspection checklists to their SWPPPs to provide documentation of their self-inspection efforts. Photo documentation of BMP installations and corrective actions is also recommended.

Policies and procedures for the construction site inspection program by the MS4 Permittees will be established by each jurisdiction based on staffing levels, available resources, permit loads and distribution, measurable goals and the use of existing inspection programs. Inspection frequencies and administrative service charges may vary between the jurisdictions and may be based on site characteristics such as project size and duration.

Enforcement policies and procedures have been established individually by each jurisdiction during the development of their stormwater quality management ordinance. The MS4 Permittees have all adopted a policy of obtaining compliance with the program rather than resorting to citations and fines. Their intent will be to work with contractors and site owners/operators to resolve problems and develop effective site management strategies. The typical order of enforcement policies and procedures used by the Las Vegas Valley communities includes the issuance of Notices of Violation (NOVs), cleanup and abatement orders, and/or work stoppages and fines. Sites that refuse to comply with local program requirements may also be referred to NDEP for further enforcement.

3.5.3 Public Reporting

The Cities and the County must respond to public reporting of questionable construction activities. Currently, the Cities' Public Works and Utility Departments and the County's Public Works Department, Public Response Office and Southern Nevada Health District receive and respond to complaints. Currently, illegal dumping of unknown substances at construction sites and discharges of non-stormwater substances to the storm drain system, other than those noted in **Section 2.8**, should immediately be reported to the appropriate city, Clark County Public Response Office or the Southern Nevada Health District.

3.5.4 Public Resources

The NDEP, Bureau of Water Pollution Control is the state agency responsible for issuing the Nevada Stormwater General Permit for Construction Activity, NV100000. As such, NDEP can provide assistance to contractors and design engineers with permit requirements, preparing SWPPPs and selecting the appropriate BMPs at construction sites. The NDEP website also provides a significant amount of information about the state and EPA stormwater programs, including digital

versions of the Nevada Stormwater General Permit for Construction Activity, the NOI, the NOT, and the Small Construction Activity Waiver.

Nevada Division of Environmental Protection
Bureau of Water Pollution Control
333 W. Nye Lane
Room 129
Carson City, Nevada 89706-0851
Phone: (775) 687-9429
Fax: (775) 687-4684
Website: http://ndep.nv.gov/bwpc/storm03.htm

The Natural Resource Conservation Service (NRCS) is a division of the United States Department of Agriculture and its primary function in Nevada is to provide assistance to agricultural projects. However, the NRCS also provides local soil survey information to contractors and design engineers working on public and private construction projects.

Natural Resource Conservation Service
5301 Longley Lane
Reno, Nevada 89502
Phone: (775) 784-5317
Fax: (775) 784-5939
Website: http://www.nrcs.usda.gov/

The State of Nevada has prepared a Best Management Practices Handbook containing guidance on a variety of rural and urban area BMPs. This manual can be found on the Nevada Division of Environmental Protection Bureau of Water Quality Planning (BWQP) website.